

APPENDIX

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AN ARTICLE OF LUGGAGE

This invention relates to the construction of luggage such as suitcases and/or trolley cases for use by travellers.

5 Such cases, can conveniently be considered as comprising two major types, the first the so-called soft case and the second the so-called hard or non-soft case.

Many constructions of such cases for use by travellers are known. These known constructions of both 'hard' and 'soft' cases are of varied form and not infrequently include carrying handle arrangements and at least a pair of wheels/rolls for facilitating the movement of the case by a user.

10 In addition, it is also known to provide cases incorporating a towing handle structure which is usually moveable between a user case towing position and a retracted stowage position.

The above mentioned 'hard' cases are regarded as being hard in the sense that the walls, top and bottom cannot be pierced by a blade or needle as is possible with soft case constructions.

15 Conventionally the so-called 'hard' cases incorporate a metal or plastics framework extending all round the internal perimeter of the case in such position as to provide structural strength to the case. Such frameworks can involve internal tongue and groove arrangements.

20 The 'soft' case conventionally incorporates an internal framework of metal or appropriate plastics material extending around the total periphery of the associated case top and base/bottom sections which provide the means whereby the visual appearance of the case is obtained and also serves to support a soft

outer covering. In addition, plywood or plastics material such as P. E. board reinforcement at the case top, base, and corner sections may be incorporated.

Whilst the provision of an internal framework is a standard/common feature of 'soft' case construction it is known to avoid using the framework extending around the internal periphery of a 'soft' case and to provide instead internal reinforcement arrangements, i.e. P. E. side panels together with P. E. material base and back panels. These particular cases have become known as 'Box' construction or side panel cases.

It is an object of the invention to eliminate such frames and the need for such internal reinforcement arrangements.

Broadly, in accordance with a first aspect of the invention there is provided a soft suitcase including shaped lid and base forming sections, wherein the sections are moulded and are shape wise maintaining in the absence of any internal/external perimeter framing and reinforcing side, base and back panels, and wherein the two moulded sections are hinged connected together by means of a Zip fastener arrangement that provides both an opening and closing facility for the suitcase, a pair of wheels is provided at one end of the base section, there being one such wheel to each corner of said end, additionally selective expansion of the storage volume of the suitcase and wherein the lid and base sections comprise foamed plastics material.

Preferably that in order to provide for said expansion of the storage volume of the suitcase the Zip fastener arrangement may incorporate first and second separately operable Zip fasteners, the first providing the opening and closing facility and second the storage volume expansion, and wherein a gusset may be provided between the zipping portions of said second Zip fastener that is associated with volume expansion, the arrangement being such that the volume of the suitcase can be selectively increased by appropriate operation of said second Zip fasteners.

Further preferably wherein the lid forming and base forming sections incorporate corrugations so positioned as to counteract wrinkling at the corners of the mouldings arising from the moulding thereof.

Also preferably wherein in order to provide capability of a multiple volume expansion facility the Zip fastener arrangement may incorporate additional Zip fasteners each having associated therewith an expansion gusset whereby operation of a Zip fastener associated with a particular gusset enables appropriate volume expansion of the
5 suitcase.

Preferably wherein there is provision of a first pair of wheel assemblies at one end of the base and a second pair of wheel assemblies at the corresponding end of the lid.

10 Further preferably wherein the wheel assemblies are so located on their respective sections as to lie at the corners of a rectangle.

Further preferably wherein there are provided runs of piping such as to provide stiffness to the Zip fastener arrangement(s), and wherein the piping may be stiffened by an
15 internally provided wire extending lengthways of the piping.

Further preferably wherein piping may be provided in the join between the Zip fastener portion associated with the lid section and the lid section, between the zipping portion of the same Zip fastener and between the zipping portion associated with the base
20 section and the base section.

Preferably wherein the foamed plastics material may be EVA.

In accordance with a second aspect, there is provided a method of producing soft
25 suitcase and including the steps of moulding from a material exhibiting soft suitcase characteristics lid forming and base forming sections of such construction as to be shape wise self supporting in the absence of internal or external perimeter frame and reinforcing side, base or back panels whereby the form of the case is established and maintained by the moulded lid and base sections, connecting together the lid and base
30 forming sections by means including a Zip fastener arrangement that hinges the two sections with respect to each other and provides opening and closing facility to the suitcase, additionally enabling expansion of the storage volume of the suitcase and wherein the lid and base sections comprise a foamed plastics material.

For a better understanding of the invention and to show how to carry the same into effect reference will now be made to the accompanying drawings in which:

5 Figure 1 illustrates a general oblique front view of a case incorporating the concepts of the invention;

Figure 2 illustrates a general oblique rear view of a case incorporating the concepts of the invention;

10 Figure 3 is a schematic fragmentary view illustrating details of the structure of the one end of a case illustrated in Figures 1 and 2;

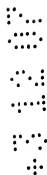


Figure 3A illustrates schematically a detail of the luggage of Figure 3;

Figure 4 is a schematic fragmentary view illustrating details of the structure of the other end of a case illustrated in Figures 1 and 2; and

Figure 5 illustrates a bottom view of a case incorporating two pairs of wheel assemblies.

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Referring now to the drawings and more particularly to Figures 1 and 2 the case shown in Figure 1 can be regarded as incorporating lid and base sections 1, 2 respectively of a tray like form moulded from a foamed plastics material such as that known as EVA. The sections 1 and 2 are externally covered by a fabric material shaped to conform closely to the external form of the lid and base sections.

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The two sections 1 and 2 are secured one to the other by a Zip fastener configuration 3 that provides a conventional Zip fastener type closure facility to the case and if it should be needed the facility of enabling increase in the storage volume of the case 1

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To provide enhanced physical shape retaining physical strength to the surfaces of the moulded lid and base sections 1 and 2 and to avoid the formation of material wrinkles during the moulding operation corrugations/recesses 4 are provided at the corner regions 5 of the rims 6 of the associated section.

An opening 7 is provided at one end 8 of the base section 2 for receiving a towing handle arrangement 9 (Figure 2). In addition each of the corner regions 5 of the other end 10 of the base section 2 is provided with a profiled indentation 11 defining the location of suitcase handling wheel assemblies 12..

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Referring now to Figures 3 and 3A these Figures very schematically illustrates in more detail the Zip fastener arrangement 3 and additionally more detail relating to the structure of the the suitcase at said other end 10 of the base and lid sections 1 and 2.

5 As shown in the Figures the Zip fastener arrangement 3 is a double arrangement of Zip fasteners including a first Zip fastener 3A associated with the provision of a gusset 3C for enabling volume expandability for the case and including a first zipping portion 13 connected with the lid section 1 and extending substantially around the total perimeter of the lid section 1 and a second zipping portion 14 that
10 is effectively connected to a first zipping portion 15 of a second Zip fastener 3B the latter having a second zipping portion 16 connected with and extending substantially around the total perimeter of the base section 2 between the hinging region (to be discussed herein after) of the lid and base sections 1 and 2.. The effective length of Zip fasteners 3A and 3B is such as to allow total closure of the
15 Zip fastener arrangement 3 for both closing the suitcase selective choice of the storage volume of the case.

If a multiple volume expansion facility is desired the zip fastener arrangement 3 incorporates additional zip fasteners (not shown in the Figures) each having associated therewith an expansion gusset whereby operation of a zip fastener
20 associated with a gusset enables appropriate volume expansion.

If volume expansion is not required a single Zip fastener would be provided merely to relate to the opening and closing of the case.

Piping 17 is provided in the join between the zip fastener portion 13 and the lid section 1, between the zipping portion 14 of fastener 3A and the zipping portion
25 15 of fastener 3B and between the zipping portion 16 and the base section 2. If desired one or more runs of the piping can be omitted.

These runs of piping 17 are such as to provide stiffness to the operational runs of the associated Zip fasteners 3A and 3B thus to the composite Zip fastener arrangement 3. If desired this piping 17 can be stiffened by an internally provided wire (not shown) extending lengthways of the piping.

- 5 It will be appreciated that not only does the piping 17 if included affords stiffness to the Zip arrangement 3 but additionally to the overall stiffness of the facing edge regions of the case lid and bottom sections 1 and 2.

- As will be seen from the Figure 3 the gusset 3C is provided between the zipping portions 14 and 15 of the Zip fasteners 3A and 3B thereby enabling expansion of
10 the storage volume of the suitcase in relation to the free width of the gusset between said zip portions 13 and 14.

- It will be understood that the fastener 3A extends around the total length of the periphery of the case lid section with the portion 13 of the fastener is connected there around, with one edge of the gusset being similarly connected to the lid section internally of the zip portion 13. the other edge portion of the gusset is
15 connected with the other zip portion 14 of the zip fastener 3A. With this arrangement when the portions 13 and 14 are in the zip closed setting thereof the gusset is hidden behind the closed Zip with the associated zip operating element located at one end of the zip. In order to enable the lid section 1 fully to move
20 away from the base section 2 to the full available width of the gusset the other end (not shown) of the Zip fastener 3A is attached to the material of the gusset at a point inwardly the said one end whereby this other end of the Zip fastener 3A when is closed is located between the gusset and the and a short length of the Zip portions 13 and 14.

- 25 The Figure 3 generally illustrates the provision of the wheel assemblies 12. In practice, in order to mount the wheel assemblies each of the profiled indentations 11 is appropriately partially removed to accept and mount the wheel assemblies

12. In other words the wheel assemblies 12 are fitted into openings thus provided in the corners 5 of the case at the locations defined by the above mentioned indentations 11. Furthermore, if desired, a bracing strip 18 schematically illustrated in Figure 3A and by dashed lines in Figure 3 may be provided between
5 the two wheel assemblies to increase riveting strength when the assemblies are riveted in position.

In order to facilitate the stability of the suitcase when resting upright on the ground the suitcase is provided with a centrally located foot 19 on the base section 1 as shown and a further centrally located strip-like foot 20 on the lid section
10 shown. As will be appreciated the arrangement of the feet 19 and 20 prevents contact of the body of the case with the ground thereby assisting in protecting the appearance of the suitcase when in use.

In the embodiment of the case illustrated in the Figures a hinge facility is located at the end 10 of the case. This hinging facility can comprise a strip 21 of suitable
15 plastics/fabric material. One end 21A of the strip 21 is located between the foot 19 and the material of the base section 1 whilst the other end of the strip (not shown) is connected internally to the lid section. It will be noted the strip 21 bridges the Zip fastener 3B and passes under the Zip fastener 3A. If desired the overall length of the hinge strip 21 can at least partially accommodate the volume
20 expansion facility. If desired other modes of hinging could be adopted.

As has been mentioned the case incorporates a towing handle assembly 9. The assembly as shown in Figure 1 includes a handle 22 located at the upper end of two side by side parallel bars 23 that telescope into a pair of parallel tubes (not shown) located in the interior of the base section 2.

25 As is conventional the case is provided with a carrying handle 24 that in the embodiment of the case illustrated is provided at the end 8 of the base section 2.

The handle 24 can be mounted to the base section 2 by any convenient means such as by means of nuts and bolts or rivets (not shown) Furthermore, if desired a bracing strip 25 schematically illustrated in Figure 4A and by dashed lines in Figure 3 may be provided in the interior of the base section to provide additional
5 riveting strength in the vicinity of the handle 23

The interior of the suitcase is provided with a lining that covers in the structural features located in the interior of the lid and bottom section 1 and 2..

Referring now to Figure 5 this Figure illustrates a modified structure of the case of the preceding Figures in which the case is provided with two pairs of wheel
10 assemblies 12 rather than the single pair illustrated in the previous Figures. In this modification one pair of wheel assemblies is provided upon the lid section 1 and a further pair of wheel assemblies is provided upon the base section 2.

With a view to accommodating the mounting of the wheel assemblies to the lid section the associated corners 5 of the case can be formed in the manner
15 previously discussed in relation to the assemblies 12 of the base section shown in Figure 3 .

It will be appreciated that the lid section would, if found necessary be suitably shape wise modified so as to enable the mounting of wheel assemblies 12 to the lid section

20 The relative dimensioning of the wheel assemblies 12 and the base and lid sections 1 and 2 would be such that the case can freely stand upright when resting upon all four wheel assemblies. As will be noted from Figure 5 the wheel assemblies 12 are effectively located at the corners of a rectangle.

The wheels of the assemblies 12 are castorable i.e., able to swivel through 360
25 degrees of arc and are located as mentioned at the corners of a rectangle.

It will be appreciated that by providing the case with four wheel assemblies it is not necessary to include the case support feet 19 or 20.

5 In practice, the case 1 can be readily manually handled by a user in a variety of modes; including a conventional two wheel pulling mode, a two wheel side pulling mode for negotiating narrow aisles and other narrow spaces i.e., between persons, a two wheel side pushing mode for negotiating narrow aisles and other narrow spaces, a four wheel side pulling mode or a four wheel forward pushing mode.

Claims

1. A soft suitcase including shaped lid and base forming sections, wherein the sections are moulded and are shape wise maintaining in the absence of any internal/external perimeter framing and reinforcing side, base and back panels, and wherein the two moulded sections are hinged connected together by means of a Zip fastener arrangement that provides both an opening and closing facility for the suitcase, a pair of wheels is provided at one end of the base section, there being one such wheel to each corner of said end, additionally selective expansion of the storage volume of the suitcase and wherein the lid and base sections comprise foamed plastics material.
2. A soft suitcase as claimed in Claim1, and characterised in that in order to provide for said expansion of the storage volume of the suitcase the Zip fastener arrangement incorporates first and second separately operable Zip fasteners the first providing the opening and closing facility and second the storage volume expansion, and wherein a gusset is provided between the zipping portions of said second Zip fastener that is associated with volume expansion, the arrangement being such that the volume of the suitcase can be selectively increased by appropriate operation of said second Zip fasteners.
3. A soft suitcase as claimed in Claim 1 or 2, and wherein the lid forming and base forming sections incorporate corrugations so positioned as to counteract wrinkling at the corners of the mouldings arising from the moulding thereof.
4. A soft suitcase as claimed in any one of Claims 1 to 3, and wherein in order to provide capability of a multiple volume expansion facility the Zip fastener arrangement incorporates additional Zip fasteners each having associated therewith an expansion gusset whereby operation of a Zip fastener associated with a particular gusset enables appropriate volume expansion of the suitcase.

5. A soft suitcase as claimed in any one of Claims 1 to 4, and wherein the provision of a first pair of wheel assemblies at one end of the base and a second pair of wheel assemblies at the corresponding end of the lid.
- 5 6. A soft suitcase as claimed in Claim 5, and wherein the wheel assemblies are so located on their respective sections as to lie at the corners of a rectangle.
7. A soft suitcase as claimed in any one of Claims 1 to 6, and including runs of piping such as to provide stiffness to the Zip fastener arrangement(s).
- 10 8. A soft suitcase as claimed in Claim 7, and wherein the piping is stiffened by an internally provided wire extending lengthways of the piping.
- 15 9. A soft suitcase as claimed in any one of Claims 1 to 6, and wherein piping is provided in the join between the Zip fastener portion associated with the lid section and the lid section, between the zipping portion of the same Zip fastener and between the zipping portion associated with the base section and the base section.
- 20 10. A soft suitcase as claimed in any of claims 1 to 9, wherein the foamed plastics material is EVA.
- 25 11. A method of producing soft suitcase and including the steps of moulding from a material exhibiting soft suitcase characteristics lid forming and base forming sections of such construction as to be shape wise self supporting in the absence of internal or external perimeter frame and reinforcing side, base or back panels whereby the form of the case is established and maintained by the moulded lid and base sections, connecting together the lid and base forming sections by means including a Zip fastener arrangement that hinges the two sections with respect to each other and provides opening and closing facility to the suitcase, additionally enabling expansion of the storage volume of the suitcase and wherein the lid and base sections comprise foamed plastics material.
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12. A method of producing a soft suitcase as claimed in Claim 11, and wherein storage volume expansion is enabled by providing the Zip fastener arrangement with two separately Zip fasteners arranging for one of these Zip fasteners to be associated with said volume expansion and providing a gusset between the zipping portions of said one of the Zip fasteners that is associated with volume expansion of the suitcase the arrangement being such that the volume of the suitcase can be increased by the expansion of the gusset upon appropriate operation of said one of the Zip fasteners.
13. A method of producing soft suitcase as claimed in Claim 11 or 12, and wherein in order to enable selective capability of multiple volume expansion of the suitcase is enabled by the Zip fastener arrangement by incorporating additional Zip fasteners each having associated therewith an additional expansion gusset whereby operation of a Zip fastener associated with a particular gusset enables appropriate volume expansion.
14. A method of producing a soft suitcase as claimed in Claims 11, 12 or 13, and providing an opening is provided at one end of the base section of the suitcase case to define the location for the mounting of a towing handle arrangement for the suitcase case.
15. A method of producing a soft suitcase as claimed in Claims 12, 13, 14 or 15, and providing an indentation at each corner of the other end of the base section of the suitcase to define mounting locations for a pair of wheels assemblies.
16. A method of producing a soft suitcase as claimed in any one of Claims 11 to 15, and providing indentations at each corner of the corresponding ends of the base and lid sections to define mounting locations for two wheel assemblies in the lid section and the base section.

17. A soft suitcase including shaped lid and base forming sections, constructed substantially as herein before described with reference to Figures 1 to 4 and to Figures 1 to 4 as modified in Figure 5 of the accompanying drawings.
- 5 18. A method of producing a soft suitcase as herein before described with reference to Figures 1 to 4, and to Figures 1 to 4 as modified in Figure 5 of the accompanying drawings.

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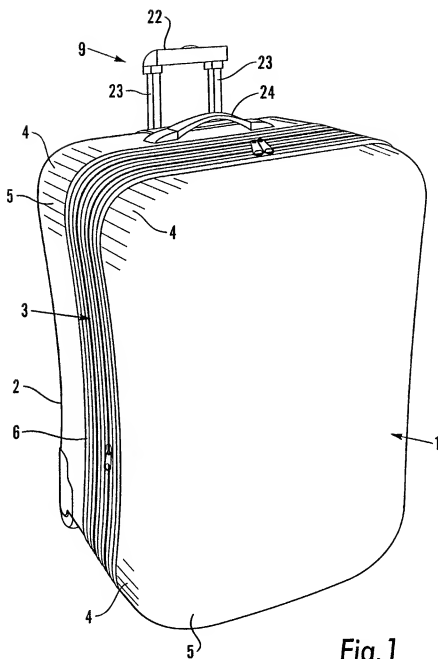


Fig. 1

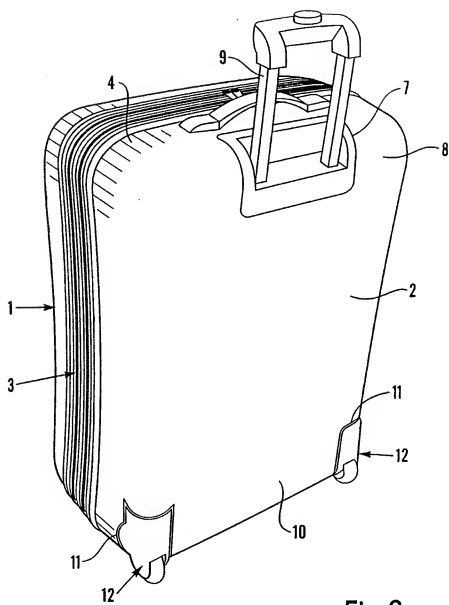


Fig. 2

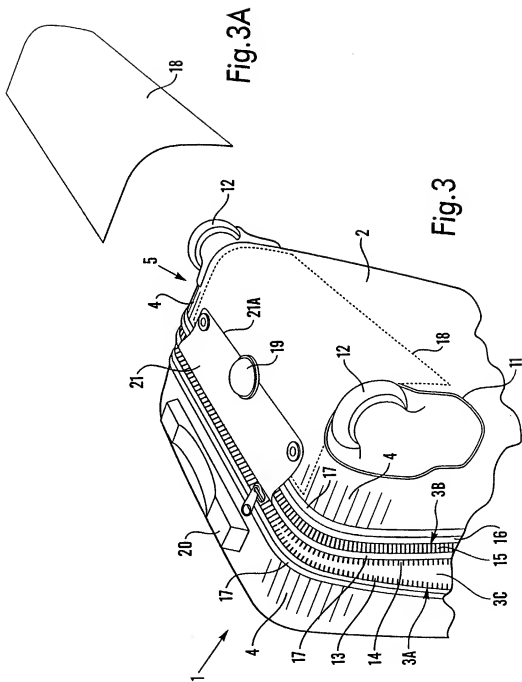




Fig. 4A

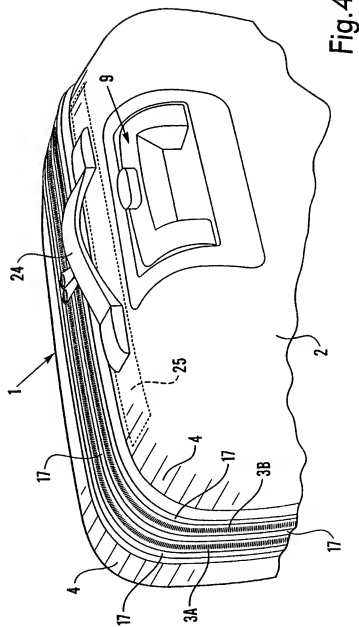


Fig. 4

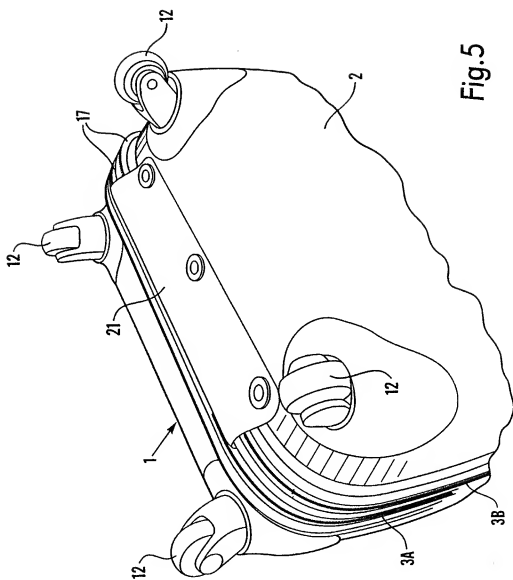


Fig. 5